

**What is claimed is:**

1. A composition of matter comprising a biologically-active compound, a porous microparticle, and an organic coating material, wherein the biologically-active compound is impregnated within the porous microparticle, and said microparticle is coated with the organic coating moiety, and wherein the organic coating material is specifically degraded inside a phagocytic mammalian cell infected with a microorganism to allow release of the biologically-active compound within the infected cell.

2. The composition of matter of Claim 1 wherein the biologically-active compound is a peptide.

3. The composition of matter of Claim 2 wherein the peptide is an antiviral peptide or an antimicrobial peptide.

4. The composition of matter of Claim 1 wherein the biologically-active compound is a drug.

5. The composition of matter of Claim 4 wherein the drug is an antiviral drug or an antimicrobial drug.

6. The composition of matter of Claim 1 wherein the biologically-active compound is a toxin.

7. A composition of matter according to Claim 1 wherein the organic coating material is chemically degraded inside a mammalian phagocytic cell infected with a microorganism.

8. A composition of matter according to Claim 1 wherein the organic coating material is a substrate for a protein having an enzymatic activity, said protein being specifically produced in a mammalian cell infected with a microorganism.

9. The composition of matter of Claim 8 wherein the organic coating material is a substrate for a protein produced by the infected mammalian cell.

10. The composition of matter of Claim 8 wherein the organic coating material is a substrate for a protein produced by the microorganism infecting the infected mammalian cell.

11. The composition of matter of Claim 1 optionally comprising a polar lipid targeting moiety comprised of one or a plurality of polar lipid molecules, wherein the polar lipid moiety is covalently linked to the biologically-active compound.



12. The composition of matter of Claim 11 wherein the polar lipid moiety is linked to the biologically-active compound through an organic spacer moiety comprising a first functional linker group and a second functional linker group.

13. The composition of matter of Claim 12 wherein the organic spacer moiety allows the biologically-active compound to act without being released from the polar lipid moiety at an intracellular site.

14. A composition of matter according to Claim 12 wherein the organic spacer moiety allows the facilitated hydrolytic release of the biologically-active compound at an intracellular site.

15. A composition of matter according to Claim 12 wherein the organic spacer moiety allows the facilitated enzymatic release of the biologically-active compound at an intracellular site.

16. A composition of matter according to Claim 12 wherein the polar lipid is acyl carnitine, acylated carnitine, sphingosine, ceramide, phosphatidyl choline, phosphatidyl glycerol, phosphatidyl ethanolamine, phosphatidyl inositol, phosphatidyl serine, cardiolipin and phosphatidic acid.

17. A composition of matter according to Claim 3 wherein the peptide is a defensin peptide.

18. A method of killing a microorganism infecting a mammalian cell, the method comprising contacting said cell with the composition of Claim 3.

19. A method of killing a microorganism infecting a mammalian cell, the method comprising contacting said cell with the composition of Claim 5.

20. A method of killing a microorganism infecting a mammalian cell, the method comprising contacting said cell with the composition of Claim 17.

21. A method for treating a microbial infection in a human wherein the infecting microbe is present inside a phagocytic cell in the human, the method comprising administering a therapeutically effective amount of the composition of Claim 3 to the human in a pharmaceutically acceptable carrier.

22. A method for treating a microbial infection in a human wherein the infecting microbe is present inside a phagocytic cell in the human, the method comprising administering



a therapeutically effective amount of the composition of Claim 5 to the human in a pharmaceutically acceptable carrier.

23. A pharmaceutical composition comprising the composition of matter of Claim 1 in a pharmaceutically acceptable carrier.

5 24. A pharmaceutical composition comprising the composition of matter of Claim 12 in a pharmaceutically acceptable carrier.

25. A composition of matter according to Claim 12 wherein the organic spacer moiety is a peptide of formula (amino acid)<sub>n</sub>, wherein n is an integer between 2 and 100 and the peptide comprises a polymer of one or more amino acids.

10050271.014502